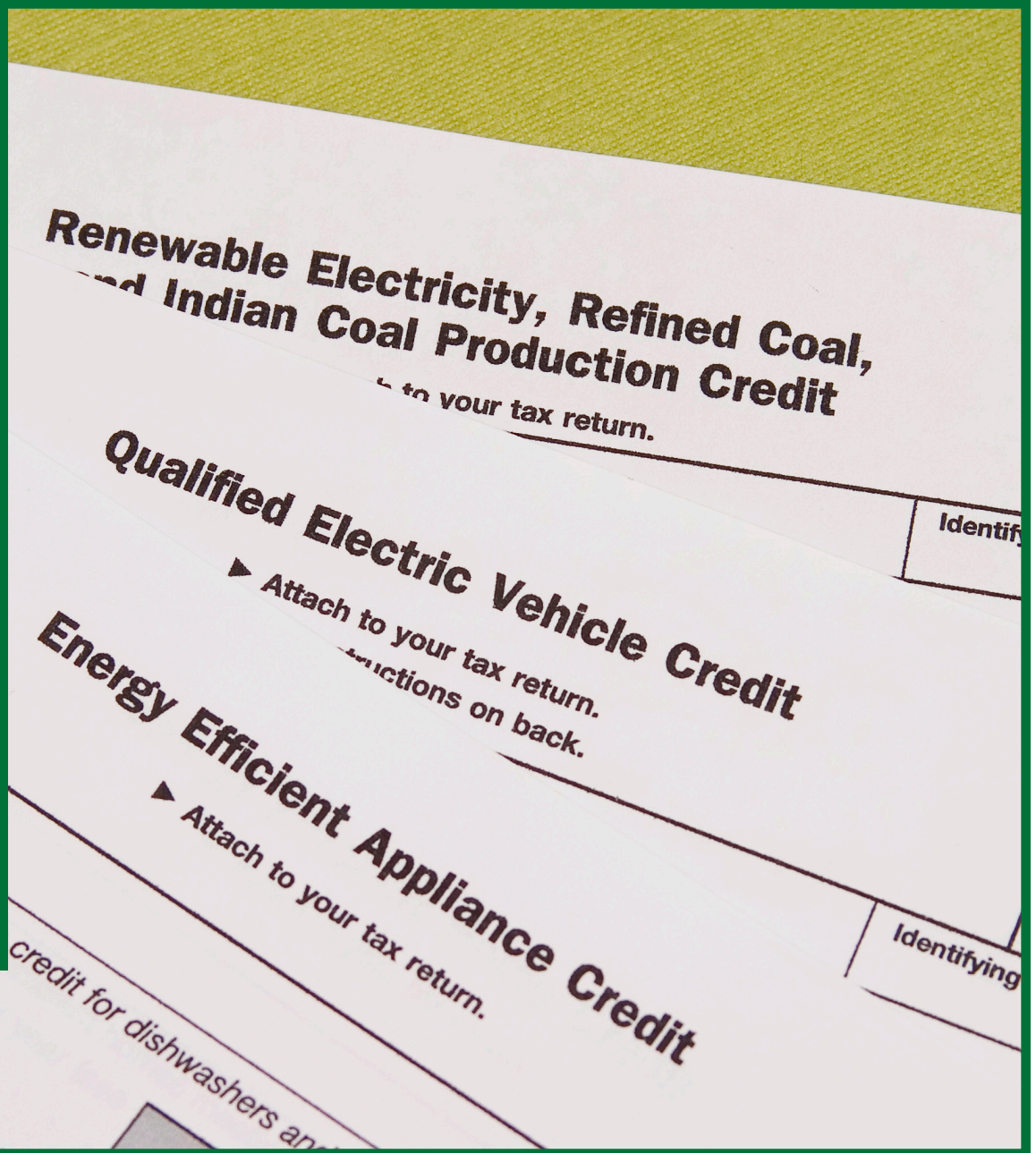


12

Economics  
Standard  
12.3.1.



# Government and the Economy: An Environmental Perspective

## **California Education and the Environment Initiative**

Approved by the California State Board of Education, 2010

### **The Education and the Environment Curriculum is a cooperative endeavor of the following entities:**

California Environmental Protection Agency  
California Natural Resources Agency  
Office of the Secretary of Education  
California State Board of Education  
California Department of Education  
California Integrated Waste Management Board

### **Key Leadership for the Education and Environment Initiative:**

**Linda Adams**, Secretary, California Environmental Protection Agency  
**Patty Zwarts**, Deputy Secretary for Policy and Legislation, California Environmental Protection Agency  
**Andrea Lewis**, Assistant Secretary for Education and Quality Programs, California Environmental Protection Agency  
**Mark Leary**, Executive Director, California Integrated Waste Management Board  
**Mindy Fox**, Director, Office of Education and the Environment, California Integrated Waste Management Board

### **Key Partners:**

Special thanks to **Heal the Bay**, sponsor of the EEI law, for their partnership and participation in reviewing portions of the EEI curriculum.

Valuable assistance with maps, photos, videos and design was provided by the **National Geographic Society** under a contract with the State of California.

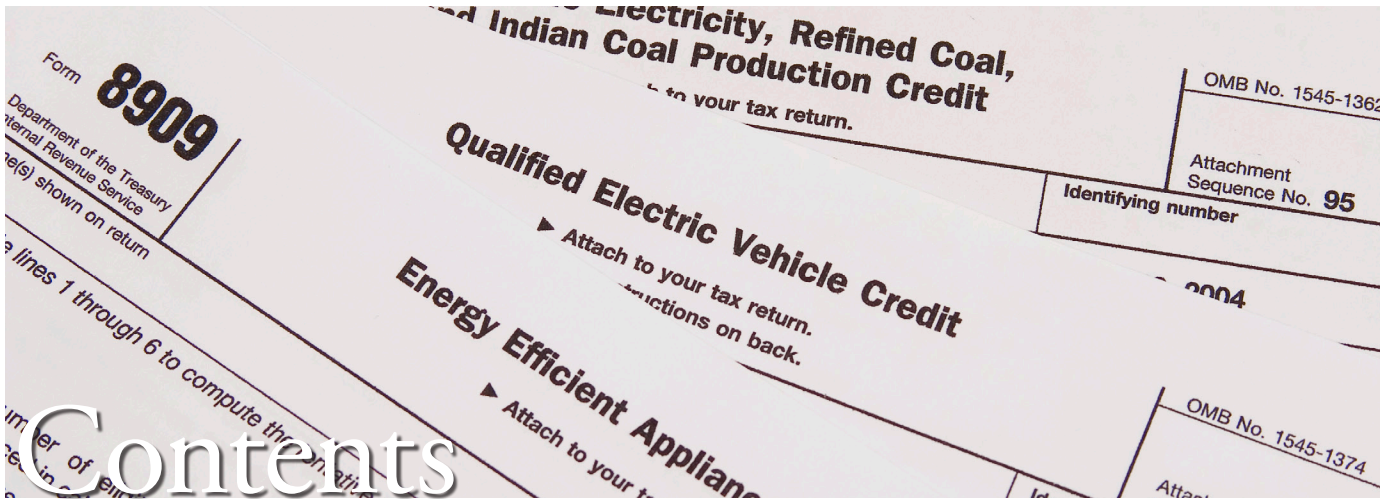
### **Office of Education and the Environment**

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## Lesson 1 Turning Environmental Challenges into Economic Opportunities

None required for this lesson.

## Lesson 2 Economic Benefits and Costs of Environmental Regulation

None required for this lesson.

## Lesson 3 Cap and Trade

None required for this lesson.

## Lesson 4 Fiscal Policy and the Environment

None required for this lesson.

## Lesson 5 Applying Fiscal Policy

Environmental Protection Scenarios . . . . . 2

## Assessments

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### Scenario #1

Americans rely on modern chemistry for everyday products. Chemistry helps produce everything from cleansers for the bathroom to the plastics that make toys, car parts, and even paint. Manufacturers produce a lot of toxic waste (an externality) in making these products. When consumers use cleansers, they go down the drain and can end up in rivers or the groundwater. The solids, such as plastics, take years to break down, and they often end up in landfills. When they end up in oceans and rivers, wildlife may get trapped in them or eat them.

What would be the best approach to eliminating these problems, since people are not going to stop using these products as long as they need cleansers, paints, and plastics?

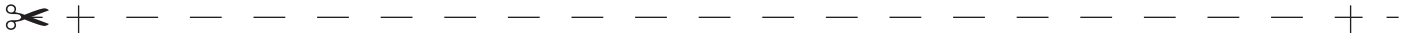


### Scenario #2

Traditional farming practices involve rotating crops and planting a diversity of crops. Crop rotation keeps the soil healthy, and a diversified crop prevents one disaster from destroying an entire farm. For example, a particular insect may target corn, but not tomatoes, or a late rain may hurt wheat or grapes, but not corn. However, in the modern economy, farming has become large-scale, and in the interests of economic survival, many farmers have abandoned traditional methods. Some large-scale farmers may grow one crop rather than many crops because then they can buy or rent one kind of harvesting machine and harvest the whole crop at once. When farmers grow the same crop year after year, the soil can become depleted. To compensate, they use chemical fertilizers that can damage the soil and leech into the rivers and groundwater, which provide drinking water. They may also spray pesticides to prevent insects from destroying crops. Pesticides can cause birth defects, lung ailments, and other health problems. Pesticides may also spread beyond the farm crops into the environment.

What can be done to decrease the damage caused by farming practices that rely on chemical fertilizers and pesticides?



**Scenario #3**

Farmers need honey bees to pollinate their crops so that plants can reproduce. Many wild plants also rely on bees for pollination. Over the past decade, bees have begun disappearing, and no one knows why. There are currently many theories about the cause. Some suggest global climate change is causing environmental changes that make bees more susceptible to diseases. Others say that a bacteria is getting into bee hives and killing bees. There is also some evidence suggesting that varroa mites are killing the bees. Yet, another hypothesis is that the nicotine-based pesticides many farmers have been using is killing bees. Because bees are essential to plant reproduction, scientists say that if the bees disappear, crop production will drop dramatically, with many ramifications to agriculture and economic systems.

What can be done about this problem? Should the government wait until the cause is known for certain before acting?

**Scenario #4**

Modern society consumes very large amounts of electricity. The generating plants that produce electricity are powered by a variety of energy sources including natural gas, coal, nuclear energy, and renewable resources. Energy production results in several pollutants including chemical air and water pollutants, hot water (nuclear power plants), and others. One practical approach to reducing the pollution created by power plants is to reduce electricity use. Since 9% of electricity is used for lighting, promoting the use of compact florescent light (CFL) bulbs has become a popular approach for conserving electricity. CFLs use approximately one-fifth the electricity of standard incandescent bulbs, so switching to CFLs can produce savings in electricity and money. But, CFLs use mercury, a highly toxic liquid metal, to produce light. When these bulbs burn out, many go to landfills where they could eventually release mercury, possibly contaminating groundwater. On the other hand, power plants that burn coal also release mercury and other pollutants into the environment. As more and more people have been switching to CFLs, the tradeoffs are becoming clearer—increased mercury pollution from the CFLs or decreased mercury pollution from coal-fired power plants.

What is the best way to deal with the fact that both CFL bulbs and coal-fired power plants can release mercury that can damage human and environmental health?





Name: \_\_\_\_\_

### Part 1

**Instructions:** Select the best answer and circle the correct letter. (2 points each)

1. The *Exxon Valdez* case demonstrated which of the following?
  - a. Courts can impose financial penalties on businesses that cause environmental damage.
  - b. Exxon was not at fault, because its policies were upheld, even if they were not followed.
  - c. Courts can only fine individuals who are responsible for environmental damage, not corporations.
  - d. Cleanup efforts show that ecosystems can be returned to their pre-accident condition.
  
2. One reason automotive companies said they objected to the “Zero Emissions” law was because \_\_\_\_\_.
  - a. hydrogen fuel cell cars are expensive to maintain and repair
  - b. they said consumers did not want to pay the high prices
  - c. electric cars break down too often to be practical
  - d. auto companies do not believe cars cause pollution
  
3. Subsidizing low-emission, high-mileage cars by the federal government is an example of a \_\_\_\_\_.
  - a. fiscal policy
  - b. monetary policy
  - c. command and control policy
  - d. popular policy
  
4. Some people and organizations considered the Partnership for New Generation of Vehicles a failure because \_\_\_\_\_.
  - a. after spending \$1.5 billion, no new technology was developed
  - b. it was designed as a research program so there were no requirements for the adoption of new technology
  - c. automotive companies were forced to comply with standards
  - d. monetary policy is rarely successful in these cases
  
5. A policy that eliminates or reduces one tax and establishes or increases other taxes such that the overall revenue is the same is called \_\_\_\_\_.
  - a. a subsidy
  - b. an excise tax
  - c. tax shifting
  - d. cap and trade

## The Role of Government in Economics: An Environmental Perspective

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Name: \_\_\_\_\_

6. A tax levied on the manufacture, sale, or use of products based on the quantity of the product is called \_\_\_\_\_.
  - a. an excise tax
  - b. an income tax
  - c. tax shifting
  - d. a user fee
  
7. A government ban on the use of DDT is an example of a \_\_\_\_\_.
  - a. fiscal policy
  - b. monetary policy
  - c. command and control policy
  - d. popular policy
  
8. Which of the following is not an element of our government's fiscal policy?
  - a. tax shifting
  - b. tax credits
  - c. subsidies
  - d. command and control
  
9. Which of the following best describes emissions trading (cap and trade)?
  - a. a regulatory tool that utilizes market systems to control externalities by providing economic incentives
  - b. an administrative approach to monitoring emissions quotas established by the government
  - c. government guidelines that help businesses determine how to control and decrease carbon dioxide emissions
  - d. industry standards for trading emissions credits in order to maximize company profits
  
10. In its early years, the U.S. Environmental Protection Agency used mostly what kind of policies?
  - a. fiscal policies
  - b. monetary policies
  - c. command and control policies
  - d. popular policies

Name: \_\_\_\_\_

Part 2

Instructions: Answer each of the following questions. (5 points each)

11. What is our government’s responsibility in regard to the economy and the environment?

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12. Describe the connection between business and the environment (natural systems). Why are supporters of both sometimes at odds?

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13. Give one example of how government action related to the environment can affect the economy.

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Name: \_\_\_\_\_

14. What can a businesses do through a carbon emissions “cap and trade” program to comply with emission allowances?

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15. What are externalities and how do they affect decisions made by businesses and our government?

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Name: \_\_\_\_\_

### Instructions:

1. Write an essay in response to the following prompt:

Why is government intervention often necessary in protecting the environment? What are the effects of such intervention on the economy? Describe some of the approaches by our government to balance environmental protection with economic needs.

2. Follow these guidelines in your writing:

- Write 500–750 words.
- Provide examples from the case studies examined in this unit.
- In your essay, use as many of the terms and concepts in the list below as possible.

CAFE standards	Pesticide manufacturers and pesticide dealers
cap and trade	six-cent tax on plastic bags
Chicago Climate Exchange	subsidies
combination of tools	sulfur dioxide emissions
command and control policies	Sweden raised taxes on carbon and sulfur emissions
Danish pay higher taxes on their cars	tax credits
eco-industrial parks	tax shifting
emissions trading scheme (ETS)	taxed almost every source of energy
encourage industries to make “green” products	taxes fertilizers
free-market economy	Title IV of the Clean Air Act
global climate change	voluntary carbon trade market
Groundwater Protection Act	waste
Partnership for a New Generation of Vehicles (PNGV)	

Your essay will be scored using the **Government Intervention in the Economy and Environment Scoring Tool** provided on page 2.

Name: \_\_\_\_\_

Government Intervention in the Economy and Environment Scoring Tool

	10 points	8 points	6 points	2 points
<b>Government Intervention</b>	Identifies and describes three specific economic reasons why government intervention is necessary for protecting the environment.	Identifies and describes two specific economic reasons why government intervention is necessary for protecting the environment.	Identifies and describes one specific economic reason why government intervention is necessary for protecting the environment.	Identifies, but does not describe, economic reasons why government intervention is necessary for protecting the environment.
<b>Economic Effects of Government Intervention</b>	Identifies and describes three of the effects government intervention has on the economy.	Identifies and describes two of the effects government intervention has on the economy.	Identifies and describes one of the effects government intervention has on the economy.	Identifies, but does not describe, the effects government intervention has on the economy.
<b>Balancing Environmental Protection with Economic Needs</b>	Describes three of the government's approaches to balancing environmental protection with economic needs.	Describes two of the government's approaches to balancing environmental protection with economic needs.	Describes one of the government's approaches to balancing environmental protection with economic needs.	Identifies, but does not describe, the government's approaches to balancing environmental protection with economic needs.
<b>Use of Examples</b>	Uses six examples from case studies in the unit.	Uses four examples from case studies in the unit.	Uses two examples from case studies in the unit.	Uses one example from case studies in the unit.
<b>Use of Terms and Concepts</b>	Uses 10–14 of the terms and concepts provided.	Uses 6–9 of the terms and concepts provided.	Uses 2–5 of the terms and concepts provided.	Uses one example from case studies in the unit.

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## Alternative Unit Assessment Master | page 4 of 5

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## Alternative Unit Assessment Master | page 5 of 5

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